

INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER R5-2012-XXXX
EL DORADO IRRIGATION DISTRICT
CAMINO HEIGHTS WASTEWATER TREATMENT FACILITY
EL DORADO COUNTY

Background

The Camino Heights Wastewater Treatment Facility (WWTF) treats and disposes of domestic wastewater from the Camino Heights community, which has 121 sewer connections. The community has an estimated population of 315. Presently, 90 percent of wastewater is generated from the residential subdivision; there is a small contribution from the commercial area along Highway 50. The general location of the WWTF is shown on Attachment A.

In 2011, the monthly average influent flow was 18,000 gallons per day (gpd) and ranged between 14,000 gpd and 26,000 gpd. The existing WWTF consists of a mechanical bar screen, flow meters, three aerated ponds, a disinfection tank, sand filters, and land application areas (LAAs). A current site plan is included in Attachment B. The influent via the mechanical bar screen is treated by three aerated Ponds 1 through 3. All three treatment ponds are unlined and operated in series. Pond 3 is also used as a storage pond. The effluent from Pond 3 is pumped to a contact tank for disinfection by sodium hypochlorite. The disinfected wastewater flows through sand filters and then is applied to the LAAs. The filters are used to reduce clogging in the irrigation system. The LAAs consist of a 4.4-acre spray field and a 1.5-acre subsurface drip irrigation field. A tailwater collection system was installed at the downhill end of the LAAs and the tailwater is returned to Pond 3. The wastewater treatment process schematic is shown on Attachment C.

Waste Discharge Requirements (WDRs) Order 5-01-100, adopted by the Central Valley Water Board on 27 April 2001, prescribes requirements for the WWTF, and allows a monthly average dry weather influent flow ("ADWF") of 60,000 gpd. The Discharger does not request to increase the monthly ADWF limit. The purpose of this update is to prescribe requirements for the new subsurface drip irrigation system and other facility improvements that were completed to comply with Cleanup and Abatement Order (CAO) R5-2007-0711.

CAO R5-2007-0711 was adopted on 31 May 2007. Before the CAO was issued, the ponds received significant seasonal surface water runoff and groundwater seepage through highly permeable Tertiary gravels and fractured bedrock from the area upslope of the unlined ponds and that resulted in inadequate wastewater storage capacity. The 2007 CAO was adopted because of a series of violations due to inadequate wastewater storage capacity, including spills to surface water, discharges of wastewater to the spray field during periods of precipitation and/or within 24 hours of a precipitation event, and land application without tailwater collection.

The CAO required the Discharger to submit a series of reports including: Revised Water Balance, Sprayfield Evaluation Report, Subsurface Drip System Completion Report, Background Groundwater Quality Study Report, Sprayfield Improvements Completion Report, and RWD. The Discharger submitted all of the required reports.

The Discharger has investigated over one million dollars to reduce seasonal inflow into the ponds and to improve WWTF treatment and operation. The improvements include:

- a. Installation of cut-off trenches above all three ponds to re-direct surface and subsurface flow away from the ponds.
- b. Installation of a tailwater return system to capture all irrigation runoff.
- c. Installation of a subsurface drip irrigation system on the existing LAAs to increase disposal capacity. The design capacity of the drip system is 59,000 gpd.
- d. Installation of sand filters at the disposal pump station to prevent plugging of drip emitters.
- e. Replacement of a manual bar screen with a mechanical one.
- f. Installation of a washer/compactor at the headworks.
- g. Installation of a Supervisory Control and Data Acquisition System to monitor the WWTF remotely.

Groundwater Conditions

In 2002, the Discharger installed five groundwater monitoring wells (MW1 through 5). MW1 and MW5 were replaced by MW1A and MW5A in March 2004 (Attachment B) because they had gone dry. Monitoring well MW1A is upgradient of the ponds and the LAAs. Wells MW2, MW3 and MW4 are downgradient of the treatment ponds, and MW5A is downgradient of the LAAs.

The two replaced wells MW1A and MW5A are deeper than the other wells, but all are screened in the first encountered groundwater. Surface soils at the WWTF consist of clay and silty sands to a depth of approximately five feet below ground surface (bgs) based on the boring logs. Based on groundwater elevations, groundwater generally flows from northeast to west or southwest with a hydraulic gradient of approximately 0.05 feet/foot.

The upgradient well MW1A has the lowest concentrations for the listed constituents except for nitrate as nitrogen compared to other wells. The average EC and average concentrations of TDS, chloride, sodium and total coliform in MW1A are less than Water Quality Objectives.

The average EC in MW1A is much less than that in MW2, MW3 and MW4, which would typically indicate degradation from the discharge because MW2, MW3, and MW4 are directly downgradient of the unlined treatment ponds. However, the average EC in the ponds is much less than the EC in those wells. Therefore, the EC levels in MW2, MW3 and MW4 may not be the result of the discharge. The significant EC differences between MW-1A and the wells downgradient of the ponds indicate that the upgradient and downgradient monitoring wells may have different groundwater sources, which may be caused by the local geology

(i.e., fractured bedrock in the Sierra Foothills). MW1A does not appear suitable to provide samples that are representative of background groundwater quality.

The total coliform organism concentrations in the upgradient well MW1 and the downgradient well MW5A are less than 2.2 MPN/100 mL, which is the Basin Plan numeric water quality objective. However, the other three downgradient monitoring wells have occasionally had total coliform organism concentrations greater than 2.2 MPN/100 mL. The groundwater coliform detections may be due to the wastewater percolation from the unlined ponds or cross contamination of the monitoring wells during construction and/or subsequent sampling. To rule out cross-contamination of the monitoring wells as the cause of the coliform detections, this Order requires the Discharger to submit a Groundwater Monitoring Well Disinfection Workplan and a Sampling and Analysis Plan that defines appropriate sampling techniques to minimize potential re-contamination of the wells. If the coliform detections do not resolve quickly after workplan implementation or if coliform detections occur again, this Order requires the Discharger to identify the source of coliform organisms in groundwater. If the coliform organism detections are caused by the WWTF, then the Discharger is required to submit a workplan for additional treatment or control for coliform organisms. If it cannot be shown that the discharge is not the source of the coliform organisms in groundwater, the Discharger is required to fully implement the additional treatment and control within three years after recurrence of coliform detections in groundwater for two or more consecutive sampling events.

Discharge Prohibitions, Specifications and Provisions

The Discharger's water balance indicates that the WWTF will provide the following capacities:

<u>Influent Flow Measurement</u>	<u>Influent Flow Limit</u>
Total Annual Flow ¹	23 million gallons
Average Daily Dry Weather Flow ^{2, 3}	60,000 gpd
Maximum Average Daily Flow ⁴	76,000 gpd

¹ Based on the calendar year (January through December).

² Dry weather is defined as the months of July through September, inclusive.

³ As determined by the total influent flow for the dry weather period divided by 92.

⁴ As determined by the total influent flow for the calendar month divided by the number of days in that month.

This Order prescribes groundwater limitations that implement water quality objectives for groundwater from the Basin Plan.

The Provisions require submittal of certain technical reports to reduce effluent salinity and to disinfect the groundwater monitoring wells.

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The Monitoring and Reporting Program is designed to verify compliance with effluent limitations, groundwater limitations, and operational requirements of the WDRs.

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